



Appendix B ECONOMIC BENEFIT STUDY

ECONOMIC BENEFIT STUDY *Yuma International Airport*

EXECUTIVE SUMMARY

This report presents the results of a study of the economic benefits of Yuma International Airport for fiscal year 1998 on the airport service area. The Yuma International Airport service area includes all of southwestern Arizona and portions of southeastern California.

The methodology of the economic benefit analysis follows procedures similar to those recommended by the Federal Aviation Administration, the Aircraft Owners and Pilots Association, and the American Association of Airport Executives. Interviews and surveys of suppliers and users of aviation services were conducted to measure economic activity created and supported within the service area by the airport.

This study does not include impacts of the Marine Corps Air Station. An annual statistical summary of economic and personnel information is available from the MCAS Community Planning and Liaison Office.

AIRPORT BENEFITS

Airports benefit the regional economy through the revenues, earnings and employment associated with aviation activity both on and off the airport. Airports create jobs, produce income, and influence regional spending levels.

There are three *measures* of economic benefits used in this study:

- **Gross Revenues**
- **Earnings**
- **Employment**

Gross revenues measure the stream of dollars from airport-related economic activity and include sales of business firms, revenues of the airport authority, and spending by air travelers.

Employment is a measure of the number of jobs supported by the gross revenues within the service area, both on and off the airport.

Earnings represent the payments received by workers who create the goods and services that are sold to produce gross revenues.

There are four *types* of economic benefits associated with activity at Yuma International Airport.

Direct Benefits result from the supply of aviation goods and services on the airport. Producers of Direct Benefits at Yuma International Airport include private businesses and the airport administration.

Indirect Benefits are due to off-site activity caused by the presence of the aviation facility. Indirect Benefits in the Yuma International Airport service area result when spending by air travelers creates revenues, jobs, and earnings in the tourism sector.

Induced Benefits are the multiplier effects of the Direct and Indirect Benefits that occur as

the initial dollars injected into the economy are respent within the service area. Multiplier effects come into play when, for example, an aircraft mechanic's wages are spent to purchase food, housing, clothing, and medical services in the local community. These second round dollars induce more jobs and earnings in the economy of the region, creating a multiplier impact.

Total Benefits are the sum of the Direct, Indirect and Induced Benefits. In this study, the combined Direct and Indirect Benefits will be referred to as Primary Benefits, but these may also be referred to as initial impacts. The Total Benefits encompass both the initial and secondary economic impacts of the airport on the service area on revenues, earnings, and employment.

The Total Benefits of Yuma International Airport in fiscal year 1998 are illustrated in the box below.

The airport was the source of total gross revenues of \$95.2 million. This is the measure of all spending flows associated with the presence of the airport and incorporates all multiplier effects of Induced Benefits. This spending and output supported 1,734 jobs within the service area of the airport, with total earnings to workers of \$27.1 million.

SUMMARY OF BENEFITS

Direct, Indirect, and Induced Benefits created by Yuma International Airport are shown in Table 1.

Yuma

REGIONAL AIRPORT

Total Economic Benefits

- **1,734 Total Jobs Supported**
- **\$27.1 Million Total Earnings**
- **\$95.2 Million Gross Revenues**

Table 1
Total Economic Benefits: Fiscal Year 1998
Yuma International Airport

	BENEFIT MEASURES		
	Gross Revenues	Earnings	Employees
Direct Benefits: On-Airport Activity Air Carriers FBO Services Air Ambulance Air Cargo Terminal Businesses Aircraft Testing Administration Capital Projects	\$33,616,000	\$8,770,000	327
Indirect Benefits: Air Visitors Lodging Food/Drink Retail Goods/Services Entertainment Ground Transport	24,807,000	6,122,000	597
Primary Benefits: Summation of Direct Benefits & Indirect Benefits	58,423,000	14,892,000	924
Induced Benefits (Multiplier Effects)	36,806,000	12,200,000	810
TOTAL BENEFITS	\$95,229,000	\$27,092,000	1,734

Direct Benefits:
On-Airport Activity

The air carriers, fixed base operators, air cargo firms, and other businesses located on Yuma International Airport, along with airport administration and capital projects, created Direct Benefits of:

- **\$33.6 Million Gross Revenues**
- **\$8.8 Million Earnings**
- **223 On-Airport jobs**

Indirect Benefits:
Air Visitors

Visitors traveling for business or personal reasons, arriving in the region by air carrier or general aviation aircraft, spent for lodging, food and drink, entertainment (such as golf and local attractions), retail goods and services, and ground transportation including auto rental and taxis.

These travelers created Indirect Benefits of:

- **\$24.8 Million Gross Revenues**
- **\$6.1 Million Earnings**
- **597 Jobs**

During FY 1998, visitors accounted for 55 percent of enplanements at Yuma International Airport. There were 43,615 airline visitors that spent an average of \$540 per trip. Airline visitors reported a stay of 8.1 nights for the average trip.

There were 5,734 transient (visiting) general aviation aircraft. Twenty percent of these travel parties stayed overnight in the Yuma area, while 80 percent stayed one day or less.

GA travel parties staying overnight averaged expenditures of \$616, while one day GA travel parties spent \$124 while in the Yuma area.

Combined Direct and Indirect Benefits summed to Primary Benefits of:

- **\$58.4 Million Gross Revenues**
- **\$14.9 Million Earnings**
- **924 Jobs**

These measures represent the "first round" revenues, earnings, and jobs in the Yuma International Airport service area due to the presence of the airport. This economic activity would not have taken place without the airport, the aviation services provided there, and spending by users of these services.

Induced Benefits:
Multiplier Effects

After the initial aviation dollars were spent in the airport service area by suppliers or users of aviation services, they continued to circulate in the region, creating additional or "induced" output, jobs and earnings.

Multipliers for six aviation related sectors (transportation, lodging, retail, eating places, entertainment, and construction) for Arizona produced by the U. S. Department of Commerce were used, after adjustment to account for "leakages" that occur as initial dollars are respent outside the service area. These service area multipliers were applied to estimate Induced Benefits.

The average multiplier for final demand (sales or gross revenue) was .63; each initial dollar of Direct plus Indirect gross revenues induced further spending that created average additional revenues of 63 cents per dollar.

Induced gross revenues were

$$\text{\$58,423,000} \times .63 = \text{\$36,806,000}$$

ECONOMIC BENEFITS

This section provides more detail on the components of the benefits of Yuma International Airport, including the Direct Benefits of on-airport operations, the Indirect Benefits from visitor spending, and the Induced Benefits due to multiplier effects.

DIRECT BENEFITS: AIRPORT OPERATIONS

Table 2 illustrates the Direct Benefits from the annual operation of Yuma International Airport. Data on revenues, employment and earnings were obtained from a mail survey and interviews conducted with airport tenants.

Revenues

On-airport aviation operations created gross revenues of \$33,616,000 in FY 1998. The largest source was the sales (revenues) of private firms of \$25,854,000 in fiscal year 1998. There were 14 private employers on the airport during the fiscal year 1998 study period.

According to the U. S. Department of Transportation, the value of airline tickets purchased by airline passengers traveling to and from Yuma exceeded \$20 million during the year. This figure was reduced by one-half to provide an estimate of revenues originated by airline activity at Yuma International Airport.

Services producing revenue on the airport included air cargo, parking, travel services, retail, auto rental, general FBO services, and air ambulance. The air ambulance firm serves several Western states and owns some 20 aircraft.

Also located on the airport is an aviation test facility . The level of activity varies over the year. At times there may be teams of 15 - 20 engineers, analysts, and support persons at the facility for stays from three days to two weeks in length. These workers make purchases in the area for supplies, equipment, and consulting personnel, as well as outlays for day to day living expenses during the testing period.

The operating revenues and budgets of government agencies added an additional \$1,752,000 to gross revenue flows. The major sources of revenue to the Yuma Airport Authority included airline landing and apron fees, rental car and other concessions, and passenger facility charges.

Construction projects for fiscal year 1998 of \$6,000,000 are included as revenues associated with the airport. Most of these outlays were due to construction work on the new terminal building.

Employment and Earnings

Combined private and public sector aviation related employment on the airport was 223 workers, bringing home annual earnings of \$5,582,000. This figures does not include construction workers who worked on the terminal building or other capital improvement projects.

General aviation firms employed more than 60 workers, while airlines reported 39 employees. Auto rental firms had more than 30 workers, slightly more employees than reported by air cargo companies using the airport. Government agencies had 36 employees, with 22 of these accounted for by the Yuma Airport Authority.

The average salary for workers at private firms was \$29,000. This figure was influenced by the presence of professionals at the air ambulance firm as well as technicians and engineers associated with aviation testing.

Construction

There were an estimated 104 construction jobs on the airport during FY 1998, earning a payroll of more than \$2 million. This is an average figure for the year, and in some months actual employment varied significantly.

Summary of Direct Benefits

The sum of aviation and construction activity at Yuma International Airport created Direct Benefits of \$33,616,000 in revenues to private businesses and government agencies. These revenues supported employment of 327 workers on the airport, with earnings of \$8,770,000.

Table 2
Direct Benefits from Airport Operations:
Revenues, Earnings and Employees
Yuma International Airport

	BENEFIT MEASURES		
	Gross Revenues	Earnings	Employees
Airport Businesses Air Carriers FBO Services Air Ambulance Air Cargo Terminal Businesses Aircraft Testing	\$25,854,000	\$5,582,000	187
Government Agencies Yuma Airport Authority FAA US Customs US Weather Bureau US Border Patrol	1,752,000	788,000	36
Capital Projects	6,000,000	2,400,000	104
DIRECT BENEFITS	\$33,616,000	\$8,770,000	327
Source: Survey of airport employers, 1998.			

INDIRECT BENEFITS: AIRLINE VISITORS

In the past year, Yuma International Airport recorded 79,300 enplaning passengers. According to an analysis of the air traveler origin and destination data bank of the U. S. Department of Transportation, 55 percent of passengers boarding airliners at Yuma International Airport (43,615 persons) were visitors to the region (Table 3).

During April of 1998, a questionnaire was administered to gather information on purpose of travel, length of stay, destination, and expenditures by category of spending for airline visitors. Those surveyed included some 300 enplaning visitors to the Yuma International area. After removing those that were incomplete or otherwise not useable, 263 surveys were analyzed.

Table 3
Yuma International Airport
Airline Visitor Travel Patterns

Enplanements	79,300
Percent Visitors	55%
Number of Visitors	43,615
Average Spending per Trip	\$540
Total Air Visitor Spending	\$23,532,000

Source: Airline Visitor Survey, 1998.

The average spending per trip reported by all airline visitors in all travel categories (business, personal and tourism) was \$539.50, rounded here to \$540 to simplify the tables. Multiplication of \$540 by 43,615 air visitors yields total air visitor spending of \$23,532,000 for FY 1998.

Detail on travel patterns by purpose of travel is shown in Table 4. The survey results revealed that 59 percent of air visitors at the Yuma International Airport were persons whose main purpose was business travel. One out of four airline passengers (24%) reported traveling for personal reasons, primarily visiting family and friends. The smallest category was the 17 percent of visitors who described themselves as tourists to the region.

The average length of stay for airline travelers was 8.1 days. Business travelers recorded the shortest stay (5.0 days) and those visiting for personal reasons had the longest stay (13.9 days). Tourists stayed an average of 10.8 days in the area.

Airline travelers contributed to 355,044 visitor days for the airport service area during FY 1998. On an average day, there were 973 airline travelers in the area, spending an average of \$66 per person per day in the Yuma International Airport service area.

Per person spending per trip varied by purpose of travel. Those persons traveling on business had larger than average outlays on most categories of spending, reporting lodging of \$332, food costs of \$84, and ground transportation of \$181.

Business travelers spent less than the average amount on retail outlays (\$51) and entertainment (\$16).

Those airline visitors traveling for personal reasons were most likely visiting friends and relatives. Many of these travelers reported no expenditures for lodging and, occasionally, food. It should be noted that this is somewhat of an understatement of the actual impact of their visit, since the laundry costs, water use, and grocery bill of their host was very likely increased during the time of the airline traveler's visit. The average expenditure for lodging for personal travelers was \$5.

Table 4
Yuma International Airport Passenger Survey
Passenger Spending Per Person Per Trip

	Business	Personal	Tourism	Overall
Purpose of Trip	59%	24%	17%	100%
Party Size	1.3	1.3	2.5	1.5
Nights Stay	5.0	13.9	10.8	8.1
Lodging/Trip	\$332	\$5	\$267	\$243
Food/Trip	\$84	\$77	\$110	\$87
Retail/Trip	\$51	\$104	\$70	\$67
Entertainment/Trip	\$16	\$13	\$73	\$25
Ground Trans/Trip	\$181	\$19	\$40	\$118
Total Person/Trip	\$664	\$219	\$560	\$540

Source: Survey administered in terminal during week of April 6, 1998. Sample size = 263

Those traveling for personal reasons had the largest expenditures for retail (\$104) of any travel category, spending twice as much as business travelers. Tourists reported the largest outlays for food (\$110) and entertainment (\$73) for their trip to the Yuma area.

Business travelers had the largest expense (\$181) for ground transportation, primarily for auto rental. Personal travelers staying with friends and relatives had less need for a rental vehicle, and only spent an average of \$19 for ground transportation.

Combined and weighted over all categories of travelers, airline visitors spent the largest proportion of their travel budget for lodging, at 45 percent (Table 5). Stated differently, airline

visitors to Yuma spent 45 cents of every travel dollar on lodging. The next most important spending category was ground transportation, accounting for 22 percent of outlays. Spending for food and drink per trip accounted for 16 percent of reported expenses.

Outlays per person per trip are influenced by the level of spending and the length of stay. While business visitors had the largest outlays per trip (\$664) they also had the shortest stay, at 5 nights. While tourists spent about 85 percent of the level reported for business travelers, tourist parties were in the area for twice as long. Personal travelers spend one third the amount for business travelers, but stay more than 2.5 times longer in the area to accomplish that level of spending.

Spending by airline visitors created jobs, income, and tax revenues in the service area. Multiplying

43,615 airline visitors by the average per trip outlays of \$540 gives total airline visitor spending for 1996 in the Yuma International Airport service area of \$16.5 million.

The figures for spending per person per trip in Tables 4 and 5 can be used to derive the economic value of visitor expenditures from the average airliner arriving at Yuma International Airport.

Table 5
Yuma International Airport
Airline Visitor Spending
Per Person Per Trip

Category	Spending	Percent
Lodging	\$243	45
Food/Drink	87	16
Retail	67	12
Entertainment	25	5
Transportation	118	22
TOTAL	\$540	100

Note: Expenditures per person per trip are for all survey respondents, including those who had no outlays for some of the categories shown.

Source: Airline visitor survey, 1998

The average arriving airliner arriving at Yuma International Airport carries 8.8 passengers (Table 6). Of these, 55 percent are visitors to the airport service area. The 4.8 visitors per aircraft will spend on average \$540 per person per trip. Total airline visitor spending of \$2,592 of gross revenues are injected into the local economy for each arriving airliner.

The first round spending by visitors circulates within the local economy, where a portion will be spent again, yielding a total benefit 1.63 times the initial impact. Thus, the total spending associated with the average arriving aircraft at Yuma International Airport was $\$2,592 \times 1.63 = \$4,225$ after accounting for all multiplier effects

Table 6
Yuma International Airport
Economic Value of Visitor Spending
Associated With Average Airliner

Avg. Passengers Per Plane	8.8
Percent Visitors	55%
Number of Visitors Per Plane	4.8
Trip Expenditures per Person	\$540
Value-One Arriving Airliner =	\$2,592
Value Including Multiplier =	\$4,225

GENERAL AVIATION VISITORS

Yuma International Airport attracts general aviation visitors from throughout the Western region and the nation who come to the area for both business and personal travel. Some visitors stop only briefly at the airport, some stay for most of a day, and some stay overnight. Seasonal events such as the rodeo, air shows, and dove season usually bring a surge in visiting GA aircraft.

Total transient arrivals (combined overnight and day visitors) were estimated as 5,734 aircraft for FY 1998. Overnight visitors represented 20 percent and day visitors made up 80 percent of the total.

Overnight Visitors

The assumptions underlying the calculation of overnight GA visitor economic benefits are shown in Table 7. A mail survey could not be conducted due to lack of historical records on visitor tie downs. Instead, interviews of FBO staff and selected pilots were undertaken.

Table 7 General Aviation Overnight Visitors Yuma International Airport	
Item	Annual Value
Overnight Transient AC	1,147
Avg. Party Size	2.0
Number of GA Visitors	2,294
Average Stay (nights)	2.0
Spending per Aircraft	\$616
Total Expenditures	\$706,000
Source: GA visitor interviews, 1998	

Spending per person per day was estimated as follows: lodging \$66, food \$17, retail \$20, entertainment \$15, transportation \$36. The total is \$154. Average stay was estimated as two nights, yielding per person expenditures per trip of \$208. The average arriving overnight GA aircraft, carrying two persons, thus has an economic value of \$616.

Day Visitors

According to FBO personnel, eight out of ten transient general aviation visitors to Yuma International Airport stayed in the service area for one day or less. In 1998, it is estimated that there were 4,587 aircraft that stopped at the airport for one day while the travel party conducted business or pursued a personal activity.

With an average travel party size of 2 persons, the number of visitor days created by one day aircraft was 9,174 (Table 8). These visitors spent an amount estimated at \$62 per person per day, or an outlay for two persons per aircraft of \$124.

The outlays for each spending category for day visitors was derived by using the same expenditures per person per day as used to calculate economic benefits of overnight aircraft.

Each arriving general aviation day aircraft represents food outlays of \$34, retail spending of \$40, entertainment of \$14, and transportation expenses of \$36. With an average of 12.5 general aviation day visitor aircraft arriving each day of the year, the average daily impact from these travelers is \$1,558. General aviation day visitors spent \$568,803 in the Yuma International Airport service area during calendar year 1998.

Comparing day visitor total spending to overnight visitor spending, the overnight visitor total is larger than that of the one day visitors, although there are four times as many one day aircraft. The primary difference is the absence of the lodging component in the day visitor budget.

Table 8 General Aviation Day Visitors Yuma International Airport	
Item	Annual Value
One Day Transient AC	4,587
Avg. Party Size	2.0
Number of GA Visitors	9,174
Average Stay (Days)	1
Spending per Aircraft	\$124
Total Expenditures	\$568,803
Source: GA visitor interviews, 1998	

COMBINED GA VISITOR BENEFITS

Table 9 shows the economic benefits resulting from spending in the region by combined overnight and day general aviation visitors arriving at Yuma International Airport.

There were 1,147 arriving overnight general aviation aircraft and 4,587 one day aircraft in FY 1998. Each overnight travel party spent an estimated average of \$616 during their trip to the Yuma area and passengers on each day visitor aircraft spent an estimated \$124 per trip.

Multiplying the expenditures for each category of spending by the number of aircraft yields the total outlays for lodging, food and drink, transportation, entertainment, and retail spending due to GA visitors during the year.

Gross revenues from air visitor spending on goods and services during 1998 summed to more than one million dollars. This figure is important in computing economic benefits since total spending supports jobs in the local economy. Moreover, sales and other taxes generated by visitors are based on total revenues.

The largest spending category was ground transport, accounting for more than three hundred thousand dollars of revenues to service area firms. Lodging outlays made up one fourth of the total GA visitor spending during the FY 1998 study period. Each arriving overnight aircraft brings lodging revenues of \$264 to the area, and an additional \$68 of spending on food and drink. Each day visitor aircraft travel party injects \$34 into local eating and drinking places. Retail trade spending exceeding \$275,000 during the year, and entertainment had markets from GA travelers of more than \$100,000.

TABLE 9
Indirect Benefits From Air Visitors
Expenditures By General Aviation Visitors: FY 1998
Yuma International Airport

Category	Number of Aircraft		Expenditures per Trip		Gross Revenues
	Overnight	Day	Overnight	Day	
Lodging	1,147		\$264		\$302,750
Food/Drink	1,147	4,587	68	\$34	233,943
Retail Sales	1,147	4,587	80	40	275,227
Entertainment	1,147	4,587	60	14	133,026
Ground Transport	1,147	4,587	144	36	330,273
TOTAL			\$616	\$124	\$1,275,219

COMBINED GA AND AIRLINE BENEFITS

Table 10 presents the Indirect Benefits of general aviation visitor spending on employment and earnings in the Yuma International Airport service area.

Of the gross revenues of \$24.8 million created by aviation visitors, an average of 25 cents of each dollar stayed in the local economy as earnings to employees (\$6,121,000) whose jobs were supported by this spending.

Based on average salaries as shown in Table 10 for each category of spending, an estimated 597 jobs in the Yuma International Airport service area were related to air visitor spending

With spending on lodging exceeding \$10 million, air traveler outlays supported 323 employees in hotels and motels with annual earnings of \$3 million for the FY 1998 year. The 323 jobs in this industry supported by air travelers accounted for approximately one half of all lodging industry jobs in Yuma County for the period.

Revenues and earnings were both approximately the same size for direct (on-airport) and indirect (visitor) benefits, but the number of jobs created by visitor spending, at 597, was more than double the 223 jobs created on the airport by aviation related activity.

TABLE 10
Indirect Benefits From Airline and GA Visitors
Revenues, Earnings and Employment
Yuma International Airport

	Gross Revenues	Earnings	Average Salary	Employment
Lodging	\$10,895,000	\$3,051,000	\$9,453	323
Food/Drink	4,017,000	1,004,000	8,479	118
Retail Sales	3,202,000	381,000	13,035	29
Entertainment	1,235,000	321,000	11,644	28
Ground Transport	5,458,000	1,364,000	13,781	99
TOTAL	\$24,807,000	\$6,121,000		597

Note: Some columns may not compute exactly due to rounding. Earnings column derived from "percent to labor" data reported in *Census of Retail Trade* and *Census of Service Industries*, U. S. Department of Commerce. Percentages are lodging 28%; food service 25%; retail 12%; entertainment 26%; ground transport 25%. Salaries are from *County Business Patterns*, U. S. Census Bureau, 1995, converted to 1998 wage rates for Yuma County. Employment is not necessarily full time equivalents; includes full and some part time workers, figures rounded to head counts.

BASED AIRCRAFT BENEFITS

Yuma International Airport is designed to serve the general aviation community. The airport has 118 based aircraft.

A survey of owners of aircraft based at Yuma International Airport was conducted in 1998 to compile information on number and value of aircraft, annual expenditures and usage patterns, purpose of travel, average party size, and average distance flown per trip.

Table 11
Based Aircraft Profile
Yuma International Airport

Item	Value
Number of Aircraft	118
Total Market Value	\$12,892,000
Average Value	\$109,250
Total Annual Outlays	\$1,380,000
Average Annual Outlays	\$11,692
Source: Based aircraft owner survey, 1998	

The average market value for the 118 aircraft based at Yuma International Airport was reported as \$109,250. The total value of all aircraft based at the airport exceeded \$12 million (Table 11).

The combined distance logged on Yuma International Airport based general aviation aircraft for personal and business travel summed to 3.4 million miles in FY 1998. The passenger miles, after accounting for party size, totaled 6.9

million miles, of which 4.9 or some 71 percent was for business travel.

An approximation of the dollar value of travel on based aircraft may be made by comparison with financial reports of scheduled air carriers, who report typical revenues per passenger mile in the range of 10 cents. Applying this value to passenger miles traveled on aircraft based at Yuma International Airport, the "airline equivalent" value of travel is \$690,000.

This figure is an estimate, which does not include a measure of the economics gains such as those from business trips, which may have been substantial. Personal trips, such as those for medical reasons, often have high economic value as well. Further, the time saved by general aviation travel compared to automobile use or flying scheduled airlines is not calculated here, but certainly has economic significance.

It is important for citizens and policy makers to be aware that airports create significant *unmeasured* social and economic benefits for the regions which they serve. For example, convenient air transportation allows freedom for individuals to travel to satisfy their preferences for goods, services, and personal needs. Airports make the regional economy more competitive by providing businesses ready access to markets, materials and international commerce.

Airports also bring essential services to a community, including enhanced medical care (such as air ambulance service), support for law enforcement and fire control, and courier delivery of mail and freight. These services raise the quality of life for residents and maintain a competitive environment for economic development.

Studies of factors influencing economic development consistently show that modern aviation facilities have an impact on the pace and quality of economic growth.

In addition to exerting a positive influence on economic development in general, aviation often reduces costs and increases efficiency in individual firms. Companies that operate general aviation aircraft typically record net income as a percent of sales approximately 50 percent greater than companies not utilizing such aircraft.

Business use dominates total miles traveled and total passenger miles flown by general aviation aircraft based at Yuma International Airport. Most aircraft owners (80%) used their aircraft at least once for business purpose during the year. Among those who reported business use, the frequency ranged from one per year to 160 times per year.

The presence of the airport as a factor affecting the personal quality of life and business success of aircraft owners was measured by survey questions asking respondents to rate the airport as "very important, important, slightly important, or not important" to their residential location decision and their business.

The survey results show that Yuma International airport is a significant factor in determining where aircraft owners live. Survey respondents derived benefits from having the airport nearby their residences and their places of employment.

More than two thirds of aircraft owners (71 percent) said that Yuma International airport is "important" or "very important" to their residential location. Sixty-six percent stated that the airport is important or very important to their business or place of employment. (This finding is consistent with previous metropolitan airport studies, where about two thirds of based aircraft owners report the airport as "important or very important" to their business.)

Those who reported the airport as important to their business were also asked for information about their business, in order to provide some measure of the overall benefit of the airport to the

business flyer. Firms represented by users of Yuma based aircraft for business purposes accounted for 1,952 employees in the service area, and many businesses responding accounting for sales exceeding \$20 - \$30 million.

A significant portion of the revenue created on the airport can be attributed to outlays by the owners of the 118 general aviation based aircraft for storage, maintenance, and operation of their aircraft throughout the year.

Owners reported expenditures averaging \$11,692 per year on repairs, maintenance and operations. Using these values, the total spending created in the region due to outlays by aircraft owners can be estimated as \$1.4 million in 1998. (Note that annual expenses for individual aircraft can vary greatly, depending on the size, technical specifications, and hours flown.)

Table 12
Based Aircraft - Use Patterns
Yuma International Airport

Type	Annual Trips
Avg. Number of Trips	51
Avg. Business Trips	35
Avg. Personal Trips	16
Percent Business Trips	69 %
Percent Personal Trips	31 %
Source: Based aircraft owner survey, 1998	

Yuma based general aviation aircraft owners reported an average of 51 non-training trips per year, which is an average of 4.3 trips per month.

Sixty-nine percent of general aviation trips (35 trips per year) were for business travel and 31 percent of trips (16 per year) were for business purposes (Table 12).

TABLE 13
Based Aircraft - Personal Use
Yuma International Airport

Item	Annual Value
Avg. Personal Trips	16
Total Personal Trips	1,888
Avg. Party Size	2.1
Avg. Round Trip Miles	504
Total Personal Miles	951,552
Total Passenger Miles	1,998,000
Source: Based aircraft owner survey, 1998	

The typical round trip for pleasure, recreation or other personal reasons was 504 miles, with 2.1 persons in the travel party (Table 13). There were an estimated 1,888 trips for personal reasons during the year.

Aircraft at Yuma International Airport flew nearly one million miles for personal reasons in FY 1998. With an average travel party of 2.1 persons, total non-business passenger miles flown during the year summed to nearly 2 million.

The typical business use for a general aviation aircraft was 589 miles round trip with 2 persons in the travel party (Table 14). There were an estimated 4,130 business trips made from Yuma Airport during the year.

Table 14
Based Aircraft - Business Use
Yuma International Airport

Item	Annual Value
Avg. Business Trips	35
Total Business Trips	4,130
Avg. Party Size	2.0
Avg. Round Trip Miles	589
Total Business Miles	2,432,570
Total Passenger Miles	4,865,000
Source: Based aircraft owner survey, 1998	

Yuma based aircraft flew 2.4 million business miles in FY 1998. With an average travel party of 2 persons, passenger miles flown on business trips originating at Yuma International Airport summed to 4,865,000.

SUMMARY AND FUTURE IMPACTS

Airports are available to serve the flying public every day of the year. On a typical day at Yuma International Airport, there are more than 330 operations by civilian airliners and general aviation aircraft in use for business, recreation, and training flights.

During each day of the year in FY 1998, Yuma International Airport generated \$260,000 gross revenues within its service area (see figure). Revenues and production support jobs, not only for the suppliers and users of aviation services, but throughout the economy. Each day Yuma International Airport provides 223 aviation related jobs directly on the airport and in total supports 1,734 local jobs in the airport service area. These workers brought home daily earnings of \$74,225 for spending in the community in 1998.

On an average day during the year, there are 972 visitors in the area who arrived at Yuma International Airport. The average expenditures for these visitors on a typical day are \$67,965.

Table 15 shows a summary of economic benefits associated with Yuma International Airport in FY 1998. As aviation activity increases in the Yuma area, the economic benefits of the airport may be expected to increase.

The short term planning horizon for the airport is associated with an increase in operations of 41%, to an annual level of 1112,000 by 2005. Assuming commerce on the airport and in the community increases at the same pace, employment on the airport will rise to 314 workers and jobs related to air visitors will increase to 842 (Table 16). Visitor spending will

rise to \$35 million (measured in 1998 dollars) and the gross revenues due to the presence of the airport will increase to \$124 million. (Note that these figures include annual capital spending by the Yuma Airport Authority under the Master Plan.)

The intermediate term planning horizon for the year 2010 is based on another 19% increase in operations, to 133,000 (Table 17). On-airport employment will rise to 374 workers and the employment impact after all multiplier effects is 2,655 total jobs. Gross revenues will rise to \$146 million in the intermediate term.

The projected benefits in the long term, defined as 153,000 operations, are shown in Table 18 for the year 2015. At this scope of activity, the airport has a potential economic benefit of \$176 million in gross revenues.

The long term projections imply on-airport employment of 442 workers with earnings of more than \$12 million (in 1998 dollars). Spending by air visitors will approach \$50 million. Accounting for all multiplier effects, jobs supported in the Yuma International Airport service area under the long term assumptions total 3,241.

Yuma International Airport Daily Economic Benefits

- **\$260,000 Gross Revenues**
- **1,734 Local Jobs Supported**
- **\$74,225 Payroll Earned**
- **972 Airline Visitors**
- **\$67,965 Visitor Spending**

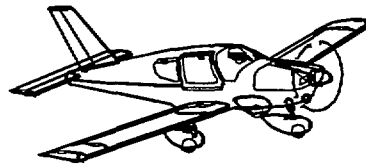


Table 15
Summary of Economic Benefits: FY 1998
Yuma International Airport

	Gross Revenues	Earnings	Employment
Airport Operations	\$27,616,000	\$6,370,000	223
Capital Projects	6,000,000	2,400,000	104
Air Visitors	24,807,000	6,121,000	597
<i>Subtotal</i>	<i>58,423,000</i>	<i>14,892,000</i>	<i>924</i>
Induced Benefits	36,806,000	12,200,000	810
Total Benefits	\$95,229,000	\$27,092,000	1,734

Note: Revenues, earnings and employment for FY 1998 reflect activity and spending associated with 79,300 operations.

Table 16
Projections of Future Economic Benefits (\$1998): Short Term/2005
Yuma International Airport

	Gross Revenues	Earnings	Employment
Airport Operations	\$38,938,000	\$8,981,000	314
Capital Projects	2,230,000	892,000	39
Air Visitors	34,978,000	8,631,000	842
<i>Subtotal</i>	<i>76,147,000</i>	<i>18,504,000</i>	<i>1,195</i>
Induced Benefits	47,972,000	15,161,000	1,046
Total Benefits	\$124,119,000	\$33,665,000	2,241

Note: Revenues, earnings and employment for Short Term are based on activity and spending associated with 112,000 operations.

Table 17
Projections of Future Economic Benefits (\$1998): Intermediate Term/2010
Yuma International Airport

	Gross Revenues	Earnings	Employment
Airport Operations	\$46,336,000	\$10,687,000	374
Capital Projects	1,766,000	706,000	39
Air Visitors	41,624,000	10,271,000	1,002
<i>Subtotal</i>	<i>89,726,000</i>	<i>21,664,000</i>	<i>1,415</i>
Induced Benefits	56,527,000	17,751,000	1,239
Total Benefits	\$146,253,000	\$39,415,000	2,655

Note: Revenues, earnings and employment for Intermediate Term are based on activity and spending associated with 133,000 operations.

TABLE 18
Projections of Future Economic Benefits (\$1998): Long Term/2015
Yuma International Airport

	Gross Revenues	Earnings	Employment
Airport Operations	\$54,677,000	\$12,611,000	442
Capital Projects	4,677,000	1,870,000	105
Air Visitors	49,116,000	12,121,000	1,181
<i>Subtotal</i>	<i>108,470,000</i>	<i>26,602,000</i>	<i>1,728</i>
Induced Benefits	68,336,000	21,795,000	1,513
Total Benefits	\$176,806,000	\$48,397,000	3,241

Note: Revenues, earnings and employment for Long Term are based on activity and spending associated with 153,000 operations.

APPENDIX

YUMA INTERNATIONAL AIRPORT

ECONOMIC BENEFIT STUDY

SURVEY FORMS

YUMA INTERNATIONAL AIRPORT ECONOMIC BENEFIT STUDY

To All Airport Employers and Tenants:

*An Economic Benefit Study for Yuma International Airport will be included as part of the Master Plan now being prepared. Your cooperation is very much needed to compile meaningful economic data about the airport. This survey of employers will be handled with the **strictest confidentiality** by an independent consultant and only aggregate numbers will be used in publishing the data. If you have questions about the survey, please call E. M. Thurmond, Airport Director, at 726 - 5882. **Please return the survey form in the postage paid return envelope within ten days.***

1. Please describe your **main business activity** (restaurant, aircraft maintenance, etc.)

Type of business:

2. How many **employees** do you have on the payroll at this time? Full Time _____

Part Time _____

3. Please estimate your **FY 1998 payroll** \$ _____

4. Please estimate your **FY 1998 operating costs** (do not include payroll but do include **cost of utilities, goods and services**) \$ _____

5. Please estimate **FY 1998 total sales** for your business

- a. EITHER indicate amount if you can release it \$ _____

- b. OR mark appropriate range on scale below

[illegible]

6. What **percentage** of your total sales consists of **taxable sales**? _____ %

Thank you for your cooperation!

YUMA INTERNATIONAL AIRPORT BASED AIRCRAFT SURVEY

Dear Aircraft Owner:

*An Economic Benefit Study for Yuma International Airport will be included as part of the Master Plan now being prepared. Your cooperation is very much needed to compile meaningful economic data about the airport. This survey of aircraft owners will be handled with the **strictest confidentiality** by an independent consultant and only aggregate numbers will be used in publishing the data. If you have questions about the survey, please call E. M. Thurmond, Airport Director, at 726 - 5882. **Please return the survey form in the postage paid return envelope within ten days.***

1. How many aircraft do you have based at Yuma International Airport? _____

2. Please estimate the market value of your aircraft. _____

3. Please estimate your annual outlays for fuel, maintenance, insurance, storage and other expenses associated with your aircraft. _____

4. Please estimate the annual number of (non- training) trips in your aircraft.

Business _____ Personal _____

5. Please estimate average ROUND TRIP MILEAGE for a typical (non-training) trip.

Business _____ Personal _____

6. What was the average number of persons on a typical trip?

Business _____ Personal _____

7. Considering the location of your personal residence, how important is the airport as a factor determining where you have decided to live?

Very Important ____ Important ____ Slightly Important ____ Not Important ____

8. Considering your business or employment, how important is the airport as a factor determining the location, operation and success of this business?

Very Important ____ Important ____ Slightly Important ____ Not Important ____

9. If the airport is important to your business or employment, please provide the information below:

Number of Employees at Your Business _____ Annual Sales _____

Please Use Other Side For Comments or Suggestions About Airport

Thank you for your cooperation!

VISITOR SURVEY

YUMA INTERNATIONAL AIRPORT

Dear Visitor:

We welcome you to the Yuma area. To help us provide the best possible services for visitors, we are asking your assistance in completion of this **anonymous and confidential** questionnaire. The information gathered will be used to develop the Yuma International Airport Master Plan. When filled out, please fold the survey form and return it to a member of the Survey Team in the waiting area. Thank you for your cooperation.

1. Where is your **permanent residence**? City _____ State _____
2. What was the main **purpose** of your trip to the Yuma area?
 - a. Winter residence ____
 - b. Business ____
 - c. Tourist ____
 - d. Personal/family/friends ____
3. How many **people** are in your travel party? Circle : 1 2 3 4 5 or more (specify) _____
4. How many **NIGHTS** did you stay in the Yuma area on this trip?
Circle: None 1 2 3 4 5 6 7 2 weeks 3 weeks or more (specify) _____
5. Where was your **primary destination** for this trip?
City of Yuma ____ Military Facility ____ Other? _____
6. Please estimate **spending by your ENTIRE TRAVEL PARTY** on each category during your TOTAL STAY in the Yuma area. **Circle** the closest figure.

Hotel/Lodging/Other Housing Rental:

None \$50 100 150 200 300 400 500 600 700 800 900 1000 1500 or more (specify) _____

Restaurant Food and Drink (But do not include groceries):

None \$25 50 75 100 150 200 250 300 400 500 600 700 800 900 or more (specify) _____

Retail Spending for Goods and Services (Include groceries but not entertainment):

None \$25 50 75 100 150 200 250 300 400 500 600 700 800 900 or more (specify) _____

Entertainment (Golf, movies, etc.):

None \$25 50 75 100 150 200 250 300 400 500 600 700 800 900 or more (specify) _____

Ground Transportation Including Auto Rental:

None \$25 50 75 100 150 200 250 300 400 500 600 700 800 900 or more (specify) _____

YUMA INTERNATIONAL AIRPORT THANKS YOU!